SYNTHESIS OF ETHYL 3,5-DIMETHYL-4-(ARYLIMINOMETHYL)-1H-PYRROLE-2-CARBOXYLATES AND THEIR REACTIONS WITH THIOGLYCOLIC ACID

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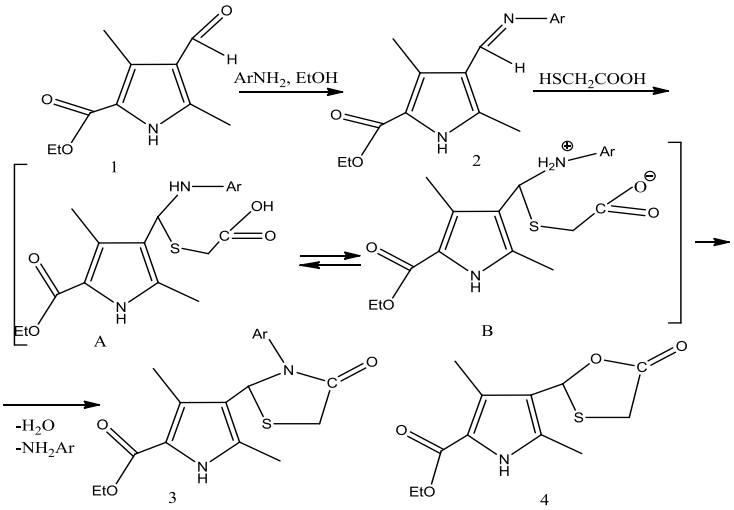
Pyrroles with azomethine fragments in the molecular structure are promising for a wide range of biological studies, including in the field of agrochemistry as growth regulators. In order to search for new biologically active compounds we performed the synthesis of pyrrolylazomethine by condensation of ethyl 2,3-dimethyl-4-formyl-pyrrolecarboxylate with aromatic amines by refluxing in ethanol, according to the scheme.



The isolated products according to TLC and NMR ^{1}H spectra are individual substances. The assignment of their structures to E-series was made on the basis of the position of the signals of azomethine protons in the NMR ^{1}H spectra and the comparison of the calculated heats of formation (H_f) for E- and Z-isomers within the framework of the semiempirical approximation of MNDO RM3.

Afterwards, we carried out a study of the reactivity of azomethines **2** in reactions with thioglycolic acid in various anhydrous media. It should be noted that the expected thiazolidinones **3** were formed with low yields in a mixture with 2-pyrrolyl-1,3-oxathialan-5-one. In the case of azomethines with electron-donating groups in the phenyl nucleus, only oxathiolanone **4** was isolated in reactions with thioglycolic acid. Probably, the formation of oxathiolanone is formed through intermediate **B** and this is facilitated by the electron-rich pyrrole cycle.